

Topic: Connection between Solar Interplanetary Structures and the response of Earth's radiation belts

Project Title:

The ring current response to solar and interplanetary structures and the corresponding radiation belt variability

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Project Information:

The goal of this proposed work is to characterize the ring current response to solar and interplanetary structures (CMEs, CIRs, high speed streams etc.) and the impact that this response has on the outer radiation belt variability. For this, a multitude of different data sets, that cover more than a full solar cycle (from 2001 to ~2016), will be put together. The Cluster observations of the inner magnetosphere will be the primary data set used to monitor the ring current variability. After 2012, this data set will be complemented by the data from the RBSP mission. The Radiation belt variability will be monitored using data from the SAMPEX and RBSP missions while data mainly from ACE and Wind, will be used to characterize the interplanetary disturbances. The outcome of this work will become a valuable input to inner magnetosphere models for comparison/reality checks of the model predictions with in-situ observations.

ROSES ID: NNH13ZDA001N

Duration:

Selection Year: 2013

Program Element: Focused Science Topic

Citations: